Hydrogeologically Vulnerable Areas Map - Background:

In response to Executive Order D-5-99, SWRCB staff created a map displaying locations where published hydrogeologic information indicates conditions that may be more vulnerable to groundwater contamination. These locations are termed "Hydrogeologically Vulnerable Areas." The Governor's Executive Order was initiated due to groundwater concerns over releases of MTBE, primarily from leaking underground storage tank sites. However, areas that are vulnerable to one chemical are also vulnerable to a host of additional contaminants; the map of hydrogeologically vulnerable areas shows locations that are more vulnerable (susceptible) to groundwater contamination from activities taking place at the ground surface. The map was completed in November, 2000. Based on Department of Water Resources (DWR) reports, United States Geological Survey publications, and other published studies, the map identifies areas where geologic conditions allow recharge to underlying water supply aquifers at rates or volumes substantially higher than in lower permeability or confined areas of the same groundwater basin.

The map reflects the best efforts to compile DWR groundwater basin information (scale 1:250,000 - or one inch: four miles) and to identify the *most vulnerable* hydrogeologic areas in a particular basin according to published information. The outlined areas are linked to a metadata table which (1) notes the DWR basin name and number, (2) identifies the published source of information (e.g., title, date, author, and appropriate page, figure, table, or plate number), and (3) describes the specific criteria upon which the vulnerability category is based. Groundwater resources underlying designated (e.g., published) recharge, rapid infiltration, or unconfined areas were considered categorically *more* vulnerable to potential contaminant releases than groundwater supplies underlying areas of slower recharge, lower infiltration rates, or intervening low permeability deposits (i.e., confining layers).

Staff did *not* map areas where local groundwater supplies occur chiefly in the fractured igneous and metamorphic rocks which underlie widespread mountain and foothill areas (e.g. Sierra Nevada) or in permeable lava flows which may provide primary recharge for extensive but sparsely populated groundwater basins (e.g. Modoc Plateau). For purposes of this exercise, groundwater resources in these geologic terranes are considered *de facto* as hydrogeologically vulnerable. In addition, many small alluvial groundwater basins in regions of the Mojave and Colorado Deserts were not mapped due to their sparse population. The delineation of areas in San Diego County was also deferred since it relies primarily on imported surface water supplies.

These maps and metadata tables were distributed to DWR and the Department of Public Health for review and revision. The map is not intended to be the final arbiter of local hydrogeologic conditions or to override more recent or detailed site-specific knowledge. Rather, it is offered as a large-scale

management tool to help allocate limited statewide resources in a more effective manner per the Governor's order.